

# Mineral Industry Surveys

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## MANGANESE IN DECEMBER 2005

On a gross-weight basis, reported consumption of manganese ore containing 35% or more manganese, exclusive of that consumed at iron and steel plants, was 51,800 metric tons (t) in December 2005, which was a 63% increase compared with that in November 2005, according to the U.S. Geological Survey. This figure increases to 54,200 t when estimates for annual respondents are added on the basis of 2004 data. Corresponding industry stocks of ore at the end of the month were 288,000 t, which includes an estimate for annual respondents on the basis of 2004 data. This was a 5% decrease from that of November 2005.

Domestic consumption of manganese ore during the fourth quarter of 2005 was 123,000 t, which was a 44% increase from that during the third quarter of 2005, and a 21% decrease from the revised fourth quarter of 2004 (108,000 t). Domestic

consumption during 2005 was 418,000 t, which was about the same as the revised consumption for 2004 (417,000 t).

Foreign trade data for December will appear in a subsequent report. The following comparisons of trade data were made on the basis of manganese content (table 1). The data for November 2005 tabulated in this report indicate that the total exports of 1,720 t were 5% lower than those of the prior month, owing primarily to a decrease in exports of manganese ore and silicomanganese. Manganese imports were 74,000 t, which was a decrease of 9% compared with those of October. The decrease in manganese imports was primarily attributable to decreases in manganese dioxide, manganese metal, and silicomanganese imports.

### Ferroalloy prices, manganese content

	High-carbon ferromanganese <sup>1</sup> (dollars per gross ton)	Medium-carbon ferromanganese <sup>1</sup> (cents per pound)	Silicomanganese <sup>1</sup> (cents per pound)	Manganese metal <sup>2</sup> (cents per pound)
December 1	650.00-680.00	46.00-49.00	35.00-37.00	78.00-82.00
December 8	685.00-720.00	46.00-49.00	35.00-38.00	78.00-82.00
December 15	690.00-750.00	47.00-51.00	37.00-40.00	70.00-76.00
December 22	710.00-750.00	48.00-51.00	37.00-40.00	70.00-76.00
December 29	710.00-750.00	48.00-51.00	36.00-39.00	70.00-76.00

### Ore prices, dollars per metric ton unit, manganese content<sup>3</sup>

	44% Manganese Ore <sup>2</sup>	48% Manganese Ore <sup>2</sup>
December 1	1.85-1.95	2.30-2.40
December 8	1.85-1.95	2.30-2.40
December 15	1.85-1.95	2.30-2.40
December 22	1.85-1.95	2.35-2.50
December 29	1.85-1.95	2.35-2.50

<sup>1</sup>Source: Platts Metals Week, dealer import price.

<sup>2</sup>Source: Ryan's Notes, North American transaction price.

<sup>3</sup>To determine dollars per metric ton, multiply the manganese content percentage by the price.

TABLE 1  
SELECTED U.S. FOREIGN TRADE IN MANGANESE<sup>1</sup>

(Metric tons, manganese content)<sup>2</sup>

	Imports for consumption			Exports		
	Ore and dioxide	Ferroalloy and metal	Total	Ore	Ferroalloy and metal	Total
2004:						
November	23,800	80,100	104,000	376	845	1,220
January-November	230,000	577,000 <sup>r</sup>	807,000 <sup>r</sup>	40,200	7,910	48,200
2005:						
January	7,650	45,000	52,600	162	955	1,120
February	40,700	29,000	69,700	111	1,170	1,280
March	22,300	42,000	64,300	206	1,160	1,360
April	38,400	39,900	78,300	2,350	778	3,130
May	16,500	47,400	64,000	364	1,380	1,740
June	19,500	41,000	60,500	272	1,550	1,820
July	21,000	40,000	61,000	197	934	1,130
August	23,800	25,400	49,100	234	1,360	1,600
September	41,800	31,700	73,600	564	909	1,470
October	41,000	40,200	81,200	480	1,330	1,810
November	40,400	33,600	74,000	101	1,620	1,720
Total	313,000	415,000	728,000	5,050	13,100	18,200

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>As reported except as estimated for imports of manganese dioxide and manganese waste and scrap and for exports from gross weights.

Source: U.S. Census Bureau.

TABLE 2  
U.S. IMPORTS FOR CONSUMPTION OF SILICOMANGANESE IN NOVEMBER 2005<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	Year to date		
				Gross weight	Mn content	Customs value <sup>2</sup>
Argentina	--	--	--	88	58	\$64,000
Australia	2,800	1,820	\$1,620,000	31,400	20,800	18,300,000
Canada	634	454 <sup>3</sup>	361,000	1,000	777	575,000
France	--	--	--	2	1	2,860
Georgia	--	--	--	11,500	8,690	6,910,000
Kazakhstan	--	--	--	20	13	17,500
Korea, Republic of	5,000	3,250	2,970,000	5,220	3,410	3,280,000
Mexico	4,500	2,950	2,680,000	22,700	15,000	15,800,000
Norway	1,360	825	1,530,000	50,400	31,700	50,100,000
Romania	--	--	--	57,100	38,300	41,700,000
Russia	1,540	970	1,090,000	12,900	8,720	10,300,000
South Africa	7,590	5,040	4,140,000	99,500	65,700	60,200,000
Spain	--	--	--	4,000	2,670	2,770,000
Total	23,400	15,300	14,400,000	296,000	196,000	210,000,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF FERROMANGANESE IN NOVEMBER 2005<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	Year to date		
				Gross weight	Mn content	Customs value <sup>2</sup>
<b>Low carbon:</b>						
China	415	382	\$684,000	14,300	12,200	\$23,400,000
Japan	--	--	--	3,300	2,650	3,830,000
Korea, Republic of	1,250	1,000	1,510,000	2,650	2,050	2,990,000
Mexico	1,040	835	1,070,000	7,040	5,640	7,710,000
Netherlands	--	--	--	17	14	29,800
Norway	--	--	--	240	197	385,000
South Africa	319	295	571,000	2,610	2,420	4,770,000
Spain	--	--	--	36	28	41,800
Total, low carbon	3,020	2,510	3,840,000	30,200	25,200	43,200,000
<b>Medium carbon, 1%-2% C:</b>						
Brazil	14	9	25,400	14	9	25,400
China	--	--	--	3,150	2,520	4,490,000
Korea, Republic of	--	--	--	13,000	10,400	11,300,000
Mexico	617	493 <sup>3</sup>	528,000	12,900	10,200	13,500,000
Norway	--	--	--	1,810	1,480	2,610,000
South Africa	1,430	1,160	1,140,000	26,400	21,400	29,200,000
Total, m.c., 1%-2% C	2,060	1,660	1,700,000	57,300	46,000	61,100,000
<b>Medium carbon, 2%-4% C:</b>						
South Africa	--	--	--	61	48	30,600
<b>High carbon:</b>						
Australia	508	386	245,000	4,960	3,810	2,630,000
Brazil	--	--	--	13,800	10,700	9,720,000
Canada	18	14	15,900	36	28	32,900
China	--	--	--	9,040	6,890	5,940,000
France	--	--	--	4,100	3,200	2,830,000
Hong Kong	--	--	--	3,360	2,550	1,960,000
Mexico	--	--	--	797	623	726,000
Norway	--	--	--	114	92	100,000
Poland	--	--	--	11	9	17,500
South Africa	15,500	12,000	6,400,000	113,000	87,900	61,400,000
Ukraine	--	--	--	2,840	2,230	1,260,000
Total, high carbon	16,000	12,400	6,660,000	152,000	118,000	86,600,000
Grand total	21,100	16,500	12,200,000	240,000	189,000	191,000,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE ORE (20% OR MORE Mn) IN NOVEMBER 2005<sup>1,2</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>3</sup>	Year to date		
				Gross weight	Mn content	Customs value <sup>3</sup>
More than 20%, but less than 47% manganese:						
China	--	--	--	5,140	1,050	\$35,100
Gabon	--	--	--	9,660	8,290	1,180,000
Ghana	--	--	--	18	7	2,340
Mexico	2,940	1,080	353,000	8,810	4,320	1,030,000
Namibia	--	--	--	26,000	10,400	1,950,000
United Kingdom	--	--	--	87	40	6,000
Total	2,940	1,080	353,000	49,700	24,100	4,200,000
47% or more manganese:						
Australia	18,600	9,470	2,890,000	41,100	21,300	5,700,000
Belgium	19	13	15,000	153	101	114,000
Brazil	3,410	1,820	744,000	12,400	7,020	2,230,000
China	--	--	--	8,600	4,300	781,000
France	--	--	--	60	56	6,670
Gabon	54,000	26,800	3,940,000	400,000	205,000	32,200,000
Ghana	--	--	--	72	50	4,320
India	--	--	--	85	42	12,800
South Africa	--	--	--	68,000	33,100	7,170,000
Total	76,000	38,100	7,580,000	530,000	271,000	48,200,000
Grand total	78,900	39,200	7,940,000	580,000	295,000	52,500,000

-- Zero.

<sup>1</sup>Quantities for general imports and imports for consumption are identical.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE DIOXIDE IN NOVEMBER 2005<sup>1</sup>

(Metric tons, gross weight)

Source	Quantity	Customs value <sup>2</sup>	Year to date	
			Quantity	Customs value <sup>2</sup>
Australia	649	\$1,020,000	15,600	\$20,700,000
Belgium	20	42,900	374	828,000
Brazil	6	10,200	429	464,000
China	1,220	1,250,000	9,230	9,660,000
Germany	10	52,600	88	313,000
Japan	162	200,000	3,920	5,380,000
Poland	--	--	7	12,000
United Kingdom	--	--	1	6,370
Total	2,060	2,570,000	29,700	37,300,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE METAL IN NOVEMBER 2005<sup>1</sup>

(Metric tons)

Source	Gross weight	Customs value <sup>2</sup>	Year to date	
			Gross weight	Customs value <sup>2</sup>
<b>Unwrought flake:</b>				
China	581	\$901,000	12,200	\$18,300,000
Germany	--	--	7	28,200
Hong Kong	--	--	18	30,000
South Africa	283	529,000	5,160	9,150,000
Total	864	1,430,000	17,300	27,500,000
<b>Unwrought powder:</b>				
China	139	227,000	1,400	2,130,000
South Africa	333	656,000	3,550	7,040,000
Total	472	883,000	4,950	9,180,000
<b>Unwrought, other:</b>				
China	--	--	220	376,000
Germany	24	49,700	2,540	4,870,000
Spain	264	542,000	2,780	6,570,000
South Africa	140	279,000	1,260	2,430,000
Total	428	871,000	6,800	14,200,000
<b>Other manganese, wrought:</b>				
Austria	--	--	1	53,300
Canada	--	--	1	12,400
China	--	--	320	522,000
France	2	21,800	25	259,000
Germany	--	--	4	42,300
Mexico	--	--	5	8,980
Spain	--	--	75	162,000
United Kingdom	--	--	(3)	77,300
Total	2	21,800	431	1,140,000
Grand total	1,770	3,210,000	29,500	52,000,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

<sup>3</sup>Less than 1/2 unit.

Note: Imports for consumption of metallic manganese waste and scrap totaled 23 tons, all of which was from Canada, to give a year-to-date total of 616 tons.

Source: U.S. Census Bureau.

TABLE 7  
U.S. EXPORTS OF MANGANESE ORE (20% OR MORE Mn), FERROMANGANESE,  
SILICOMANGANESE, AND MANGANESE METAL BY COUNTRIES OF DESTINATION IN NOVEMBER 2005<sup>1</sup>

(Metric tons, gross weight)

	Manganese ore		Ferromanganese, 2% or less C		Silicomanganese		Manganese metal <sup>2</sup>	
	October	Year to date	October	Year to date	October	Year to date	October	Year to date
Australia	--	--	--	--	--	5	--	7
Belgium	--	--	--	--	--	--	--	1,000
Brazil	--	--	--	--	30	41	(3)	20
Canada	165	2,950	753	8,690	--	300	20	262
Chile	--	4	--	1	--	--	--	5
China	19	6,390	--	--	--	--	--	--
Colombia	--	6	--	--	--	--	1	4
Denmark	--	17	--	--	--	--	--	--
El Salvador	--	--	--	--	--	--	--	13
France	--	--	--	--	--	101	--	1
Germany	17	154	--	--	--	--	--	292
Hong Kong	--	--	--	7	--	--	--	3
Indonesia	(3)	39	--	--	--	22	--	8
Israel	--	4	--	--	--	--	--	--
Italy	--	--	--	--	--	33	--	4
Japan	--	--	--	--	--	--	44	482
Korea, Republic of	--	34	--	--	--	--	--	27
Kuwait	--	83	--	--	--	--	--	--
Malaysia	--	--	--	--	--	--	7	7
Mexico	--	101	19	703	22	359	15	197
Netherlands	--	--	--	2	--	22	--	--
New Zealand	--	2	--	--	--	--	--	--
Peru	--	--	--	--	--	--	--	5
Poland	--	193	--	--	--	--	--	--
Russia	--	21	--	--	--	--	--	--
Singapore	--	1	--	--	--	--	--	--
Spain	--	--	--	--	--	8	--	10
Sweden	--	94	--	--	--	--	29	124
Taiwan	--	--	--	--	--	--	--	(3)
Trinidad and Tobago	--	--	--	--	--	--	--	3
United Kingdom	--	--	--	--	--	--	--	1
Venezuela	--	--	--	--	--	--	--	4
Total	201	10,100	772	9,400	52	891	117	2,480

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes manganese-aluminum, some other alloys, and waste and scrap.

<sup>3</sup>Less than 1/2 unit.

Note: Exports of ferromanganese with more than 2% carbon totaled 1,080 tons, of which 66 tons went to Canada and 1,020 tons went to Mexico, to give a year-to-date total of 3,340 tons.

Source: U.S. Census Bureau.

TABLE 8  
U.S. FOREIGN TRADE IN SELECTED MANGANESE CHEMICALS IN NOVEMBER 2005, BY CLASS<sup>1</sup>

Class	Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Principal sources and destinations: gross weight (metric tons); value <sup>2</sup> (thousands)	Year to date		
				Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Principal sources and destinations: gross weight (metric tons); value <sup>2</sup> (thousands)
<b>Imports for consumption:</b>						
Manganese oxides other than dioxide	538	\$336	Mexico 242; \$111	4,570	\$2,960	Mexico 2,310; \$968
Manganites, manganates, and other permanganates	--	--	--	38	123	Germany 38; \$123
Potassium permanganate	98	205	Czech Republic 44; \$95	938	1,960	Czech Republic 591; \$1,250
Sodium permanganate <sup>3</sup>	15	8	China 15; \$8	300	665	China 165; \$189
Sulfates, basket category, including manganese sulfate	5,550	2,460	China 4,020; \$1,620	42,900	24,200	Mexico 20,200; \$10,500
<b>Exports:</b>						
Manganese dioxide	576	523	Canada 317; \$168	5,420	4,600	Canada 3,110; \$1,480
Manganese oxides other than dioxide	732	726	Canada 430; \$209	12,200	7,660	Canada 9,200; \$3,350
Manganites, manganates, and other permanganates	4	8	Canada 4; \$8	87	207	Canada 44; \$99
Potassium permanganate	282	662	Brazil 93; \$245	3,430	7,310	Spain 1,370; \$2,600
Sodium permanganate <sup>3</sup>	124	235	Japan 87; \$201	654	1,690	Japan 419; \$1,110
Sulfates, basket category, including manganese sulfate	1,690	1,050	Canada 1,380; \$591	21,100	13,900	Canada 17,900; \$7,740

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>For imports, Customs value; for exports, free alongside ship value.

<sup>3</sup>In December 2004, the U.S. Harmonized Tariff Schedule was changed for manganites, manganates and permanganates to implement the United States-Australia Free Trade Agreement. Starting in 2005, sodium permanganate is tracked separately from the "manganites, manganates, and other permanganates" trade category.

Source: U.S. Census Bureau.